

Detailed Action

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: #97 (Fig. 1). (Response of 4/30/08 indicated that a replacement drawing of figure 1 has been filed, but it is not present in the file wrapper. Only a marked-up copy of amended figure 1 was received on 1/14/08). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

REASONS FOR ALLOWANCE

1. Claims 1-4, 9-10, 12-16, 18-20, 22 and 25-27 are allowed.
2. The claims 1-4, 9-10, 12-16, 18-20 and 25-27 are allowable over the prior art of record for at least the reason that the prior art fails to teach or suggest a structure as in claim 1 or 16, comprising a support plate having at least orifice, a pressed metal plate

including liquid circulation channels, an intermediate plate sandwiched between said support plate and said pressed metal plate, and at least one manifold fixed to the intermediate plate and connected to the cooling circuit, said at least one manifold being introduced in said at least one orifice of the support plate. The aforementioned limitations in combination with all remaining limitations of the respective claims are believed to render said independent claims 1, 16 and all claims dependent therefrom patentable over art of record.

3. The claim 22 is allowable over the prior art of record for at least the reason that the prior art fails to teach or suggest a structure as in claim 22, comprising a support plate, a pressed metal plate including liquid circulation channels, a plurality of deflectors and turbulators, said turbulators being distributed between two deflectors. The aforementioned limitations in combination with all remaining limitations of the respective claims are believed to render said independent claim 22 patentable over art of record.

4. The closest references to the present invention are believed to be as follows: Capriz et al. (US 6,661,658) disclose a support plate having at least orifice, a pressed metal plate including liquid circulation channels, but fails to disclose intermediate plate or manifold, the deflectors or the turbulators. These above listed references all lack the specific structure and arrangement in claims 1, 16 or 22.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. None of the cited references, either taken alone or in combination is believed to render the present invention unpatentable as claimed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Azar (US 5,103,374) and Liu et al. (US 6,929,058) disclose a cooling channel having turbulators.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert J. Hoffberg whose telephone number is (571) 272-2761. The examiner can normally be reached on 8:30 AM - 4:30 PM Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayprakash Gandhi can be reached on (571) 272-3740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RJH 6/3/08

/Robert J. Hoffberg/
Examiner, Art Unit 2835

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Supervisory Patent Examiner, Art Unit 2835